

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1                   1.       (Previously presented) A method for reverse transcribing an RNA, that  
2 comprises:

3                   (a)     providing a reverse transcription reaction mixture comprising said RNA, a  
4 primer, a divalent cation, and a mutant thermoactive DNA polymerase, wherein said mutant  
5 DNA polymerase is characterized in that

6                            i) in its native form said DNA polymerase comprises an amino acid  
7 sequence that is SEQ ID NO:1;

8                            ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9 the amino acid at position 5 of said amino acid sequence is L or I; and

10                           iii) the amino acid at position 4 of said amino acid sequence is mutated in  
11 comparison to said native sequence to an amino acid other than E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said mutant  
13 DNA polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA.

1                   2.       (Previously presented) The method of Claim 1, wherein said amino acid  
2 sequence is SEQ ID NO:2, the amino acid at position 3 of said amino acid sequence is Q or G,  
3 and the amino acid at position 6 of said amino acid sequence is S or A.

1                   3.       (Original) The method of Claim 1, wherein said amino acid sequence is  
2 SEQ ID NO:3.

1                   4.       (Previously presented) The method of Claim 1, wherein said amino acid  
2   sequence is SEQ ID NO:4, and the amino acid at position 3 is Q or G.

1                   5-7 (Cancelled)

1                   8.       (Original) The method of Claim 1, wherein said mutant DNA polymerase  
2   is thermostable.

1                   9.       (Original) The method of Claim 1, wherein said DNA polymerase is a  
2   mutant form of a *Thermus* species DNA polymerase.

1                   10.     (Original) The method of Claim 1, wherein said DNA polymerase is a  
2   mutant form of *Thermus thermophilus* DNA polymerase or *Thermus aquaticus* DNA  
3   polymerase.

1                   11.     (Original) The method of Claim 1, wherein said temperature of said  
2   reaction mixture in step (b) is between 40°C and 80°C.

1                   12.     (Original) The method of Claim 1, wherein said amino acid at position 4  
2   of said amino acid sequence is mutated in comparison to said native sequence to an amino acid  
3   other than E, A, G, P, Q, or D.

1                   13.     (Previously presented) A method for reverse transcribing an RNA, that  
2   comprises:

3                   (a)     providing a reverse transcription reaction mixture comprising said RNA, a  
4   primer,  $Mg^{+2}$ , and a mutant thermoactive DNA polymerase, wherein said mutant DNA  
5   polymerase is characterized in that

6                   i) in its native form said DNA polymerase comprises an amino acid sequence that  
7   is SEQ ID NO:1;

8                   ii) the amino acid at position 2 of said amino acid sequence is S or A and the  
9 amino acid at position 5 of said amino acid sequence is L or I; and

10                   iii) the amino acid at position 4 of said amino acid sequence is mutated in  
11 comparison to said native sequence to an amino acid other than E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said mutant  
13 DNA polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA.

1                   14.     (Previously presented) The method of Claim 13, wherein said amino acid  
2 sequence is SEQ ID NO:2, the amino acid at position 3 of said amino acid sequence is Q or G,  
3 and the amino acid at position 6 of said amino acid sequence is S or A.

1                   15.     (Original) The method of Claim 13, wherein said amino acid sequence is  
2 SEQ ID NO:3.

1                   16.     (Previously presented) The method of Claim 13, wherein said amino acid  
2 sequence is SEQ ID NO:4, and the amino acid at position 3 is Q or G.

1                   17-19. (Cancelled)

1                   20.     (Original) The method of Claim 13, wherein said mutant DNA  
2 polymerase is thermostable.

1                   21.     (Original) The method of Claim 13, wherein said DNA polymerase is a  
2 mutant form of a *Thermus* species DNA polymerase.

1                   22.     (Original) The method of Claim 13, wherein said DNA polymerase is a  
2 mutant form of *Thermus thermophilus* DNA polymerase or *Thermus aquaticus* DNA  
3 polymerase.

1                   23.     (Original) The method of Claim 13, wherein said temperature of said  
2 reaction mixture in step (b) is between 40°C and 80°C.

1                   24.     (Original) The method of Claim 13, wherein said amino acid at position 4  
2 of said amino acid sequence is mutated in comparison to said native sequence to an amino acid  
3 other than E, A, G, P, Q, or D.

1                   25.     (Original) A method for amplifying an RNA, that comprise:

2                   (a)     reverse transcribing said RNA according to a method of Claim 1 to  
3 provide a cDNA;

4                   (b)     amplifying said cDNA.

1                   26.     (Original) A method of Claim 25, wherein in step (b) said amplifying is  
2 carried out using a polymerase chain reaction.

1                   27.     (Original) A method for amplifying an RNA, that comprise:

2                   (a)     reverse transcribing said RNA according to a method of Claim 13 to  
3 provide a cDNA;

4                   (b)     amplifying said cDNA.

1                   28.     (Original) A method of Claim 27, wherein in step (b) said amplifying is  
2 carried out using a polymerase chain reaction.

1                   29.     (Previously presented) A method for amplifying an RNA using a single-  
2 enzyme reverse transcription/amplification reaction, that comprises:

3                   (a)     providing an amplification reaction mixture comprising said RNA, a pair  
4 of primers, a divalent cation, and a mutant thermostable DNA polymerase, wherein said mutant  
5 DNA polymerase is characterized in that

6                    i) in its native form said DNA polymerase comprises an amino acid sequence that  
7 is SEQ ID NO:1;

8                    ii) the amino acid at position 2 of said amino acid sequence is S or A and the  
9 amino acid at position 5 of said amino acid sequence is L or I; and

10                   iii) the amino acid at position 4 of said amino acid sequence is mutated in  
11 comparison to said native sequence to an amino acid other than E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said mutant  
13 DNA polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA;

15                   (c)     treating said reaction mixture at an appropriate temperature for said  
16 mutant DNA polymerase to initiate synthesis of an extension product of said second primer to  
17 provide a double-stranded cDNA molecule; and

18                   (d)     amplifying said double-stranded cDNA molecule of step (c) by a  
19 polymerase chain reaction.

1                   30.     (Previously presented) The method of Claim 29, wherein said amino acid  
2 sequence is SEQ ID NO:2, the amino acid at position 3 of said amino acid sequence is Q or G,  
3 and the amino acid at position 6 of said amino acid sequence is S or A.

1                   31.     (Original) The method of Claim 29, wherein said amino acid sequence is  
2 SEQ ID NO:3.

1                   32.     (Previously presented) The method of Claim 29, wherein said amino acid  
2 sequence is SEQ ID NO:4, and the amino acid at position 3 is Q or G.

1                   33-35. (Cancelled)

1                   36.     (Original) The method of Claim 29, wherein said mutant DNA  
2 polymerase is thermostable.

1                   37.     (Original) The method of Claim 29, wherein said DNA polymerase is a  
2 mutant form of a *Thermus* species DNA polymerase.

1                   38.     (Original) The method of Claim 29, wherein said DNA polymerase is a  
2 mutant form of *Thermus thermophilus* DNA polymerase or *Thermus aquaticus* DNA  
3 polymerase.

1                   39.     (Original) The method of Claim 29, wherein said temperature of said  
2 reaction mixture in step(b) is between 40°C and 80°C.

1                   40.     (Original) The method of Claim 29, wherein said amino acid at position 4  
2 of said amino acid sequence is mutated in comparison to said native sequence to an amino acid  
3 other than E, A, G, P, Q, or D.

1                   41.     (Previously presented) A method for amplifying an RNA using a single-  
2 enzyme reverse transcription/amplification reaction, that comprises:

3                   (a)     providing an amplification reaction mixture comprising said RNA, a pair  
4 of primers, Mg<sup>+2</sup>, and a mutant thermostable DNA polymerase, wherein said mutant DNA  
5 polymerase is characterized in that

6                             i) in its native form said DNA polymerase comprises an amino acid  
7 sequence that is SEQ ID NO: 1;

8                             ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9 the amino acid at position 5 of said amino acid sequence is L or I; and

10                            iii) the amino acid at position 4 of said amino acid sequence is mutated in  
11 comparison to said native sequence to an amino acid other than E, A, G, or P; and

12 (b) treating said reaction mixture at a temperature sufficient for said mutant  
13 DNA polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA;

15 (c) treating said reaction mixture at an appropriate temperature for said  
16 mutant DNA polymerase to initiate synthesis of an extension product of said second primer to  
17 provide a double-stranded cDNA molecule; and

18 (d) amplifying said double-stranded cDNA molecule of step (c) by a  
19 polymerase chain reaction.

1 42. (Previously presented) The method of Claim 41, wherein said amino acid  
2 sequence is SEQ ID NO:2, the amino acid at position 3 of said amino acid sequence is Q or G,  
3 and the amino acid at position 6 of said amino acid sequence is S or A.

1 43. (Original) The method of Claim 41, wherein said amino acid sequence is  
2 SEQ ID NO:3.

1 44. (Previously presented) The method of Claim 41, wherein said amino acid  
2 sequence is SEQ ID NO:4, and the amino acid at position 3 is Q or G.

1 45-47. (Cancelled)

1 48. (Original) The method of Claim 41, wherein said mutant DNA  
2 polymerase is thermostable.

1 49. (Original) The method of Claim 41, wherein said DNA polymerase is a  
2 mutant form of a *Thermus* species DNA polymerase.

1 50. (Original) The method of Claim 41, wherein said DNA polymerase is a  
2 mutant form of *Thermus thermophilus* DNA polymerase or *Thermus aquaticus* DNA  
3 polymerase.

1                    51.     (Original) The method of Claim 41, wherein said temperature of said  
2 reaction mixture in step (b) is between 40°C and 80°C.

1                    52.     (Original) The method of Claim 41, wherein said amino acid at position 4  
2 of said amino acid sequence is mutated in comparison to said native sequence to an amino acid  
3 other than E, A, G, P, Q or D.

1                    53.     (Previously presented) A method for reverse transcribing an RNA, that  
2 comprises:

3                    (a)     providing a reverse transcription reaction mixture comprising said RNA, a  
4 primer, a divalent cation, and a thermoactive DNA polymerase, wherein said DNA polymerase is  
5 characterized in that

6                                i) in is native form said DNA polymerase comprises an amino acid  
7 sequence that is SEQ ID NO:1;

8                                ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9 the amino acid at position 5 of said amino acid sequence is L or I; and

10                               iii) the amino acid at position 4 of said amino acid sequence is other than  
11 E, A, G, or P; and

12                    (b)     treating said reaction mixture at a temperature sufficient for said DNA  
13 polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA.

1                    54.     (Previously presented) The method of Claim 53, wherein said amino acid  
2 sequence is SEQ ID NO:5 and the amino acid at position 7 of said amino acid sequence is V or I.

1                    55.     (Previously presented) The method of Claim 53, wherein said amino acid  
2 sequence is SEQ ID NO:6.



1                   56.     (Previously presented) The method of Claim 53, wherein said amino acid  
2     sequence is SEQ ID NO:7 and the amino acid at position 8 of said amino acid sequence is S or T.

1                   57.     (Previously presented) A method for reverse transcribing an RNA, that  
2     comprises:

3                   (a)     providing a reverse transcription reaction mixture comprising said RNA, a  
4     primer,  $Mg^{+2}$ , and a thermoactive DNA polymerase, wherein said DNA polymerase is  
5     characterized in that

6                             i) in its native form said DNA polymerase comprises an amino acid  
7     sequence that is SEQ ID NO:1;

8                             ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9     the amino acid at position 5 of said amino acid sequence is L or I; and

10                            iii) the amino acid at position 4 of said amino acid sequence is other than  
11     E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said DNA  
13     polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14     molecule complementary to said RNA.

1                   58.     (Previously presented) The method of Claim 57, wherein said amino acid  
2     sequence is SEQ ID NO:5 and the amino acid at position 7 of said amino acid sequence is V or I.

1                   59.     (Previously presented) The method of Claim 57, wherein said amino acid  
2     sequence is SEQ ID NO:6.

1                   60.     (Previously presented) The method of Claim 57, wherein said amino acid  
2     sequence is SEQ ID NO:7 and the amino acid at position 8 of said amino acid sequence is S or T.

1                   61.     (Previously presented) A method for amplifying an RNA using a single-  
2 enzyme reverse transcription/amplification reaction, that comprises:

3                   (a)     providing an amplification reaction mixture comprising said RNA, a pair  
4 of primers, a divalent cation, and a thermostable DNA polymerase, wherein said DNA  
5 polymerase is characterized in that

6                             i) in its native form said DNA polymerase comprises an amino acid  
7 sequence that is SEQ ID NO:1;

8                             ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9 the amino acid at position 5 of said amino acid sequence is L or I; and

10                            iii) the amino acid at position 4 of said amino acid sequence is other than  
11 E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said DNA  
13 polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA;

15                   (c)     treating said reaction mixture at an appropriate temperature for said DNA  
16 polymerase to initiate synthesis of an extension product of said second primer to provide a  
17 double-stranded cDNA molecule; and

18                   (d)     amplifying said double-stranded cDNA molecule of step (c) by a  
19 polymerase chain reaction.

1                   62.     (Previously presented) The method of Claim 61, wherein said amino acid  
2 sequence is SEQ ID NO:5 and the amino acid at position 7 of said amino acid sequence is V or I.

1                   63.     (Previously presented) The method of Claim 61, wherein said amino acid  
2 sequence is SEQ ID NO:6.

1                   64.     (Previously presented) The method of Claim 61, wherein said amino acid  
2 sequence is SEQ ID NO:7 and the amino acid at position 8 of said amino acid sequence is S or T.

1                   65.     (Previously presented) A method for amplifying an RNA using a single-  
2 enzyme reverse transcription/amplification reaction, that comprises:

3                   (a)     providing an amplification reaction mixture comprising said RNA, a pair  
4 of primers, Mg<sup>2+</sup>, and a thermostable DNA polymerase, wherein said DNA polymerase is  
5 characterized in that

6                             i) in its native form said DNA polymerase comprises an amino acid  
7 sequence that is SEQ ID NO:1;

8                             ii) the amino acid at position 2 of said amino acid sequence is S or A and  
9 the amino acid at position 5 of said amino acid sequence is L or I; and

10                            iii) the amino acid at position 4 of said amino acid sequence is other than  
11 E, A, G, or P; and

12                   (b)     treating said reaction mixture at a temperature sufficient for said DNA  
13 polymerase to initiate synthesis of an extension product of said primer to provide a cDNA  
14 molecule complementary to said RNA;

15                   (c)     treating said reaction mixture at an appropriate temperature for said DNA  
16 polymerase to initiate synthesis of an extension product of said second primer to provide a  
17 double-stranded cDNA molecule; and

18                   (d)     amplifying said double-stranded cDNA molecule of step (c) by a  
19 polymerase chain reaction.

1                    66.    (Previously presented) The method of Claim 65, wherein said amino acid  
2    sequence is SEQ ID NO:5 and the amino acid at position 7 of said amino acid sequence is V or I.

1                    67.    (Previously presented) The method of Claim 65, wherein said amino acid  
2    sequence is SEQ ID NO:6.

1                    68.    (Previously presented) The method of Claim 65, wherein said amino acid  
2    sequence is SEQ ID NO:7 and the amino acid at position 8 of said amino acid sequence is S or T.